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*Ph.D Candidate*, KAIST

## Research Interest

Artificial Intelligence; Innovation

## Education

2018- PH.D in Technology Management, KAIST
2016-2018 MS in Technology Management, KAIST
2010-2016 BA in Management, Ulsan National Institute of Science and Technology (UNIST)

## Research Experience

### Working papers

"Artificial Intelligence and Firm Performance" (With Y. Park and W. Kim) Under review at ***Management Science***
2021 ***[Best paper]*** Academy of Management, Virtual, July 29-October 4
2020 Strategic Management Society, Virtual, October 26-30

"When Does AI Pay Off? AI-Adoption Intensity, Complementary Investments, and RD Strategy" (With Y. Lee, S. Choi and W. Kim) Under review at ***Management Science***
2020 ***[Best paper]*** Asian Society for Innovation and Entrepreneurship Science (ASIES) Conference, Virtual, December 1

### Work-in Progress

2021 "What Drives Boundary-Spanning Search: Evidence from the Adoption of AI in the Pharmaceutical industry" (With H. Jung and W. Kim)

### Industry Reports

2021 **Artificial Intelligence Today 2021: Who is leading AI?** with Clarivate
Media mention: http://www.koreaherald.com/view.php?ud=20210525000734

## Research Interest in AI

Given that systems based on Artificial intelligence (AI) technologies now match or surpass human levels, AI is increasingly being adopted in firms around the world. With its prevalence, AI is widely accepted as the newest general-purpose technology (GPT), following major technological innovations such as information technology and electricity. Thus, AI has the potential to change the way we innovate, do business, and organize and to affect all aspects of the economy. Aside from this expectation, a question still remains as to whether firms benefit from AI due to a lag in the gains of AI in reaching their potential. Given the recent advances of AI and massive investments by firms, understanding the adoption of AI and its firm-level implications is crucial.

In this vein, my current studies investigate the effects of AI adoption on firm performance. Specifically, one study examines this relationship, distinguishing AI technologies into augmentation versus automation and considering industry heterogeneity (manufacturing versus service industries). The other study examines the relationship by considering the intensity of AI adoption and firms' revenue growth. Furthermore, given that complementary assets have been important in GPT's successful contribution to firm productivity, understanding the role of complementary assets in the successful adoption of AI is important for firms to reap the potential benefits. Accordingly, we also examine whether a firm's investment in different technologies and research and development (RD) complements productive AI adoption.

Given that most studies are theoretical due to lack of firm-level data, and empirical paper have generally focused on the effect of AI on the labor market, I believe these lines of paper provide initial empirical evidence of performance benefits of AI. In addition, by showing empirical evidence of the complementarity between AI adoption and firm intangible investment, this paper broadens our understanding of the strategic approach to AI adoption.